

REMARKS

Claims 1-4, 7-10, 13-17 and 20-21 are currently pending. Claims 22-42 have been previously withdrawn from further consideration by the Examiner.

I. **CLAIM REJECTIONS -- 35 U.S.C. § 102**

Claims 1-3, 7-9, 13-17 and 21 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,902,640 to *Sachitano et al.*, hereinafter "Sachitano". This rejection is respectfully traversed.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. MPEP § 2131, p. 2100-76 (8th ed., rev. 4, October 2005) (*citing In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990)). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. *Id.* (*citing Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)).

The limitations in Claim 1 are not taught or suggested in Sachitano.

In particular, Sachitano does not teach or suggest that a base of the double poly bipolar transistor and a gate of the double poly metal oxide semiconductor transistor contain substantially identical dopants, as required by independent Claim 1. The Office expressly conceded on page 4, second full paragraph of the final Office Action mailed February 6, 2006, that "Sachitano et al. does not teach the base of a NPN bipolar transistor and the gate of a PMOS transistor to contain substantially identical dopants."

The current Office Action instead relies on a principle of inherency, stating that “PNP devices would inherently have an n-type base, which is substantially identical to the n-type dopant of the MOS gate 148.” The Examiner is correct that a PNP bipolar transistor does have a n-type base by definition, but the Examiner is incorrect in therefore concluding that this has anything to do with the dopant of the MOS gate 148.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted, emphasis added).

“In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

The Examiner has not provided any basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art, as he is required, and so the allegation of inherency cannot support the rejection.

An n-type base, as known to those of skill in the art, is simply a transistor base in which the conduction electron density exceeds the hole density. A PNP bipolar transistor does have an n-type base.

A dopant, as known to those of skill in the art, is an impurity that is added to a semiconductor to change the number of holes and electrons relative to each other, and an n-type dopant is an impurity that “donates” weakly-bonded electrons to the semiconductor. There are different n-type dopants – phosphorus and arsenic are both n-type dopants, but are not “substantially identical”. Certainly an n-type base is not substantially identical an n-type dopant, as alleged by the Examiner, as these are very different things. Further, to different n-type semiconductor elements do not necessarily have substantially identical dopants, so the claimed limitation is not an inherent feature of Sachitano, as alleged. In fact, Applicant respectfully submits that *Sachitano* appears to suggest differentiated doping during formation. (Col. 4, line 55 – Col. 5, line 7; Col. 10, lines 31-51).

As Sachitano does not teach or suggest that “a base of the double poly bipolar transistor and a gate of the double poly metal oxide semiconductor transistor contain substantially identical dopants” as claimed – and as expressly conceded by the Examiner – and as this feature is not inherent to Sachitano, all anticipation rejections are traversed.

Accordingly, the Applicant respectfully requests the Examiner to withdraw the § 102 rejection with respect to these claims.

II. CLAIM REJECTIONS -- 35 U.S.C. § 103

Claims 4, 10 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sachitano in view of U.S. Patent No. 6,441,441 to *Suda*, hereinafter “Suda”. The Applicant(s) respectfully traverse the rejection.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142, p. 2100-133 (8th ed. rev. 4, October 2005). Absent such a *prima facie* case, the applicant is under no obligation to produce evidence of nonobviousness. *Id.* To establish a *prima facie* case of obviousness, three basic criteria must be met: *Id.* First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *Id.* Second, there must be a reasonable expectation of success. *Id.* Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *Id.* The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *Id.*

These claims require that “at least one double poly bipolar transistor is an NPN transistor and wherein said at least one double poly MOS transistor is a PMOS transistor”, where the base of the double poly bipolar transistor and a gate of the double poly metal oxide semiconductor

transistor contain substantially identical dopants. The Examiner is correct that Sachitano does not teach or suggest this feature, as discussed at length above. The Examiner looks to Suda for this teaching.

Suda describes, variously, a PMOS transistor and an NPN bipolar transistor, and indicates in each case that boron is acceptable as a P-type dopant. Suda does not explicitly teach that these two structures contain substantially identical dopants, and certainly one could be heavily doped while the other is lightly doped.

Even if Suda did include such a teaching as alleged by the Examiner, there is no proper motivation to combine these references. As the Examiner is surely aware, the motivation to combine or modify must be specific to the actual teachings sought to be combined. "In holding an invention obvious in view of a combination of references, there must be some suggestion, motivation, or teaching in the prior art that would have led a person of ordinary skill in the art to select the references and combine them in the way that would produce the claimed invention." (*Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1385 (Fed. Cir. 2001) emphasis added). "When the references are in the same field as that of the applicant's invention, knowledge thereof is presumed. However, the test of whether it would have been obvious to select specific teachings and combine them as did the applicant must still be met by identification of some suggestion, teaching, or motivation in the prior art, arising from what the prior art would have taught a person of ordinary skill in the field of the invention." (*In re Dance*, 160 F.3d 1339, 1343 (Fed. Cir. 1998), emphasis added).

The Examiner's alleged motivation is not found anywhere in the art of reference, and nothing in *Sachitano* or *Suda* indicate that they are at all concerned with operations as a surface channel device or any particular degradation effects. Nothing in the art of reference, nor in the knowledge generally available to those of skill in the art at the time of the invention, would motivate one to make the specific combination and modification necessary to produce the claimed invention.

Applicant respectfully submits that one of ordinary skill, having only *Sachitano* before him, would not be prospectively moved to spontaneously assume that the substantial disclosure of *Sachitano* was in need of a base of a double poly bipolar transistor and a gate of a double poly metal oxide semiconductor transistor containing substantially identical dopants. In fact, Applicant respectfully submits that *Sachitano* appears to suggest differentiated doping during formation. (Col. 4, line 55 – Col. 5, line 7; Col. 10, lines 31-51).

In order to overcome these admitted deficiencies of *Sachitano*, the Examiner selectively culls from *Suda* the **inference** of a base of a double poly bipolar transistor and a gate of a double poly metal oxide semiconductor transistor containing substantially identical dopants – even though *Suda* itself does not explicitly teach that these two structures contain substantially identical dopants. The Examiner further ignores the fact that, in order to combine the references as suggested, one of ordinary skill in the art would have to completely overlook the remainder of *Suda's* various teachings of PMOS transistor and an NPN bipolar transistor structure and formation – teachings that vary significantly from *Sachitano's*.

The Examiner offers that “P-type gates and N-type gates were are recognized as functional equivalents for forming the conductive gate of a PMOS transistor” as the motivation for one of ordinary skill in the art to embark on this speculative and selective combination process – which of course has no bearing at all on identical dopants, as claimed.

In summary, there is neither a motivation nor a suggestion in either the cited references or the knowledge of a person of ordinary skill in the art at the time of the Applicant’s invention to:

- 1) spontaneously assume a deficiency in *Sachitano*; 2) seek out and find *Suda*; 3) ignore almost all of *Suda*’s teachings of structure and process; 4) selectively cull a single concept from *Suda* – a double poly bipolar transistor and a gate of a double poly metal oxide semiconductor transistor containing substantially identical dopants – even though *Suda* does not explicitly disclose such; and 5) substantially modify the processes and structures of *Sachitano* to incorporate this spontaneous extraction of concept from *Suda*. Furthermore, even if the references were to be so selectively combined, the combination would still not result in the Applicant’s invention as recited in independent Claim 1 or dependent claims 4, 10 and 20 of the Application.

Accordingly, the Applicant respectfully requests the Examiner to withdraw the § 103 rejection with respect to these claims.

All rejections are traversed. Reconsideration and allowance are respectfully requested.

SUMMARY


If any outstanding issues remain, or if the Examiner has any further suggestions for expediting prosecution of this application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *wmunck@munckbutrus.com*.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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